Claims

1. Method for improving traffic distribution in a
communication network with multipath routing, said
5   communication network being made up of nodes (j, k1, k2, k3)
and links, with one node (j) of the communication network
having a number of outgoing links, which correspond to
alternative paths for routing to a destination and to which
traffic to the destination can be distributed, according to
10 which
- distribution weightings (w(j,k1,D), w(j,k2,D), w(j,k3,D)) for
distribution of the traffic to the destination are assigned to
the outgoing links and
- the distribution weightings (w(j,k1,D), w(j,k2,D), w(j,k3,D))
15 are adjusted according to a parameter related to the load or
availability of the individual links, with, in the case of two
links with different parameter values, the distribution
weighting of the link with the higher parameter value being
reduced in relation to the distribution weighting of the other
20 link.

2. Method according to claim 1,
characterized in that
the distribution weightings (w(j,k1,D), w(j,k2,D), w(j,k3,D))
25 are adjusted according to the gap between the parameter for the
respective link and the mean value for the parameter taken over
the number of outgoing links.

3. Method according to claim 2,
30 characterized in that
for all the links of the number, the parameter value of which
is different from the mean value, the distribution weightings

(w(j,k1,D), w(j,k2,D), w(j,k3,D)) are adjusted, with the distribution weightings of links, the parameter value of which is above the mean value, being reduced and the distribution weightings of links, the parameter value of which is above the

5   mean value being increased.

4.   Method according to claim 3,
characterized in that
distribution weightings (w(j,k1,D), w(j,k2,D), w(j,k3,D)) are

10   increased or reduced in proportion to the gap between the
parameter value for the respective link and the mean value.

5.   Method according to one of the preceding claims,
characterized in that

15   - the distribution weightings (w(j,k1,D), w(j,k2,D), w(j,k3,D))
are adjusted iteratively, with an adjustment of the
distribution weightings (w(j,k1,D), w(j,k2,D), w(j,k3,D)) being
carried out with each step.

20   6.   Method according to claim 5,
characterized in that
- the distribution weightings (w(j,k1,D), w(j,k2,D), w(j,k3,D))
are initialized with start values,
- a number of iterations are carried out and

25   - the distribution weightings resulting after the number of
iterations are used for routing in the communication network to
the destination.

7.   Method according to claim 5 or 6,

30   characterized in that
when the distribution weightings are modified, an attenuation
variable that is a function of the number of the iteration is

used, bringing about a reduction in the modification of
distribution weightings (w(j,k1,D), w(j,k2,D), w(j,k3,D)) that
increases with the number of iterations.

5 8.   Method according to one of claims 5 to 7,
characterized in that
- the parameter is defined during the first iteration by the
absolute traffic load or the relative traffic load related to
the link bandwidth,
10 - the value of the parameter is modified during the iterations
for the next iteration, with the modification taking into
account the traffic transported via the link to the
destination.

15 9.   Method according to claim 8,
characterized in that
- the modification is effected by adding the traffic
transported via the link to the destination multiplied by a
factor.
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10.   Method according to one of the preceding claims,
characterized in that
the traffic distribution in the communication network is
recalculated using the resulting distribution weightings
25 (w(j,k1,D), w(j,k2,D), w(j,k3,D)).

11.   Method according to one of the preceding claims,
characterized in that
the method is implemented for a number of nodes of the
30 communication network, at which traffic distribution takes
place.

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12.   Method according to one of the preceding claims, characterized in that the method is implemented for a number of different destinations during the course of routing within the
5   communication network.

13.   Method according to one of the preceding claims, characterized in that the parameter is defined by the absolute traffic load, the
10   relative traffic load related to the link bandwidth, traffic-related costs incurred during link usage, link availability, the transit time of the respective link or the load capacity of the end nodes of the respective link.

15   14.   Method according to one of the preceding claims, characterized in that the distribution weightings $(w(j,k1,D), w(j,k2,D), w(j,k3,D))$ of a node to a destination are standardized and this standardization is maintained during modification.
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15.   Method according to one of the preceding claims, characterized in that the distribution weightings $(w(j,k1,D), w(j,k2,D), w(j,k3,D))$ for multipath routing are adjusted in the context of the ECMP
25   (Equal Cost Multi Path) method.

16.   Router with a computer program for implementing a method according to one of claims 1 to 15.

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